

MODEL
SPS-4



SPS-4

SPEAKER SELECTION SYSTEM



INSTALLATION & OPERATION GUIDE

SPS-4

Speaker Selection
System

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Introduction

The SPS-4 allows you to connect up to four pairs of speakers to your stereo receiver or amplifier and play any pair, any combination of pairs, or all pairs simultaneously. You don't have to worry about overloading your amplifier. The SPS-4 has a protection circuit that keeps your amplifier running safely, even if you have all four pairs of speakers playing at the same time.

Features and Benefits

The SPS-4 offers a number of improvements over other speaker selectors:

- Pre-printed Room Labels are included for easy identification of speaker ON/OFF buttons.
- Isolated left and right channel ground returns make the SPS-4 compatible with all types of amplifiers.
- Self-cleaning, silver-plated switch contacts assure many years of trouble-free use.
- Printed circuit board design assures high reliability.
- Spring-loaded push terminal connectors accommodate up to 14 gauge wire or "pins", making the SPS-4 compatible with most high definition speaker cables.
- 100% tested, electronically and acoustically, for frequency response, distortion and power handling.
- Only 8 1/2" wide. Match the width of 17" components by combining with another Niles 1/2-width product.

TECH SUPPORT HOTLINE

If you have questions regarding the operation of the Niles SPS-4, contact your local Niles dealer or Niles Customer Service at 1-800-289-4434.

- May be used with 4, 6, or 8-ohm speaker systems.
- Ideal for both home and commercial sound installations.
- Only a wire stripper is required for installation.
- Power handling: 100 watts/channel continuous music power.
- Frequency response: Flat (+0 dB, -0 dB) from 20 Hz to 20 kHz.
- Ten year parts and labor warranty.
- Proudly made in the USA.

Installation Considerations

SPS-4 Power Handling

The SPS-4 is designed for use with a receiver or amplifier having a maximum power output of 100 watts per channel at 8 ohms. Damage caused by the use of a higher-power receiver or amplifier will void the warranty. Niles speaker selectors with higher power handling capabilities are available. Consult your Niles dealer, or receiver/amplifier manufacturer, if you are uncertain about the power rating of your receiver or amplifier.

TOOLS REQUIRED

- Wire Stripper

Amplifier Impedance Load

As more pairs of speakers are parallel connected to a receiver or amplifier, the overall system impedance becomes lower. For example, if two pairs of 8-ohm speakers are connected in parallel, the impedance will be 4 ohms; two pairs of 4-ohm speakers in parallel become 2 ohms, and so on.

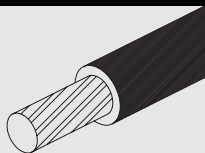
Most receivers or amplifiers are not rated for use below a 4 ohm load. Most manufacturers do not recommend connecting more than two pairs of speakers without using some form of impedance correction.

The SPS-4 includes impedance correction circuitry which protects your receiver or amplifier from low impedance loads.

The circuitry assures that your receiver or amplifier will see a safe operating load, even when all four speaker pairs are playing at the same time.

The actual impedance load the SPS-4 presents to your receiver or amplifier will vary, depending on how many speaker pairs are playing and the impedance rating of each speaker. If you have four pairs of 8-ohm speakers playing, the SPS-4 will present a 4.5 ohm impedance load to your receiver/amplifier. With four pairs of 4-ohm speakers playing, the load drops to slightly under 4 ohms.

"TECH TIP"



Wire size is expressed by it's AWG (American Wire Gauge) number. The lower the AWG number, the larger the wire, i.e., 12 AWG wire is physically larger than 14 AWG.

If you intend to use the SPS-4 with more than 2 pairs of 4-ohm speakers, it is recommended that you verify that the receiver or amplifier is capable of driving a 4-ohm load. Consult your Niles dealer, or receiver/amplifier manufacturer, if you are uncertain about the capabilities of the receiver/amplifier.

Type of Speaker Wire

For most applications, we recommend you use 16 or 18 gauge, stranded copper speaker wire for the SPS-4 connections. For wiring runs longer than 80 feet, 14 gauge wire is recommended. Using speaker wire larger than 14 gauge for the SPS-4 connections is not recommended—the wire may not fit into the connectors. Never use solid-core, aluminum, or "Romex" type wire with the SPS-4. When running speaker

wires inside walls, most states and municipalities in the U.S. specify that you must use a special type of speaker wire. Usually, the requirement is that the wire has a specific "CL" fire rating, such as "CL-2" or "CL-3". Consult your Niles dealer, building contractor, or local building and inspection department if unsure about which type of wire is best for your application.

Avoiding Interference

Speaker wires can act as an "antenna" for electrical noise. Locating speaker wires too close to a light dimmer or switch may cause a "buzzing" or "popping" sound to be heard through the speakers. If you must locate the SPS-4 wiring near electrical devices, route the speaker wires several feet away from the electrical wiring.

Using the SPS-4 with Tube-Type Amplifiers

Virtually all tube amplifiers must have a load connected at all times. If the amplifier to be connected to the SPS-4 is a tube amplifier, be sure to always have at least one pair of speakers switched on at all times. An alternative is to permanently connect a 150 ohm, 5 watt resistor across the tube amplifier's output in parallel with the SPS-4. See (Figure 1) on next page for hookup diagram.

S P E A K E R S E L E C T I O N S Y S T E M

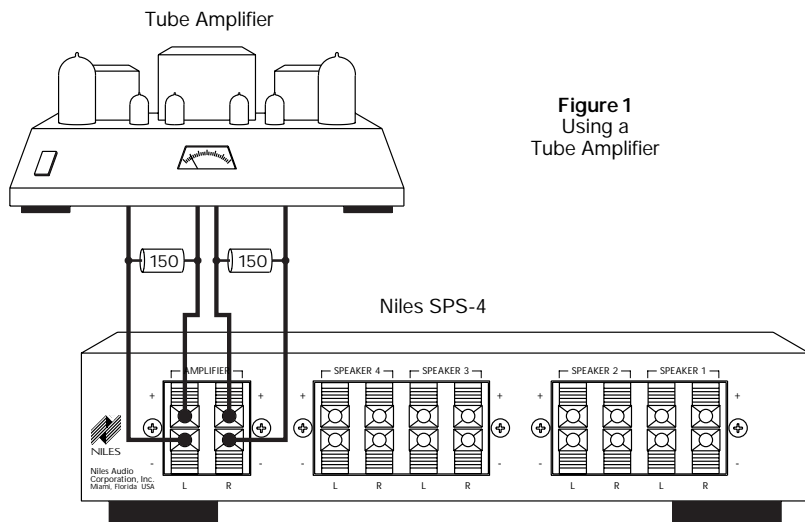
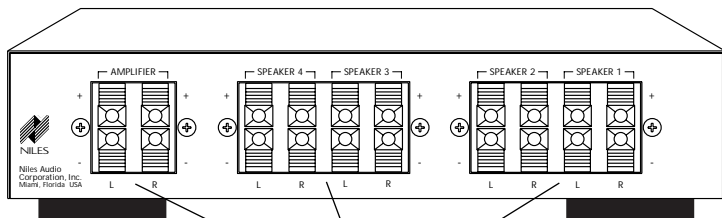
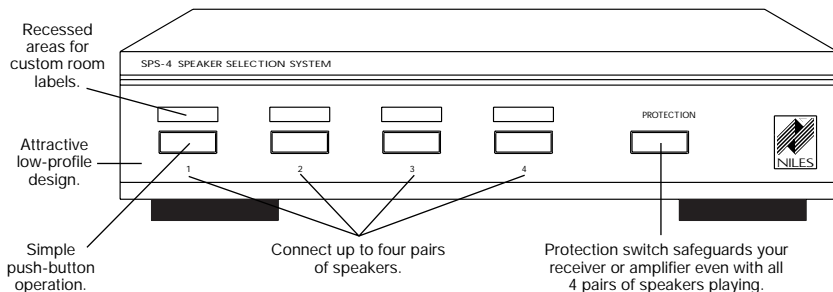


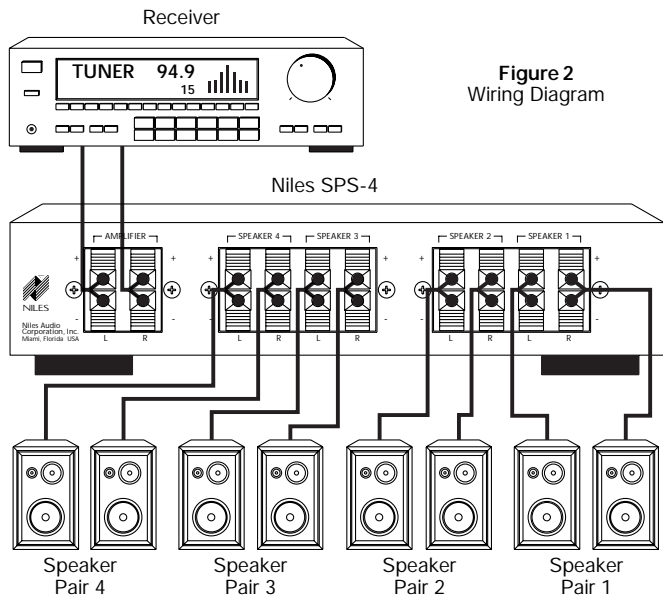
Figure 1 Using a Tube Amplifier

S P E A K E R S E L E C T I O N S Y S T E M



Installation

1. Select a convenient mounting location for the SPS-4.
2. Run all the necessary wiring to the SPS-4. Label the wires for future reference. See (Figure 2).



3. Make the connections to the SPS-4. Strip 3/8" of insulation from the end of each wire. Tightly twist the end of each wire until there are no frayed ends. Insert each wire into the appropriate hole on the spring-loaded connector terminals. Be certain that proper phasing is observed—connect the positive terminals on the SPS-4 to the positive terminals on the amplifier and speakers and the negative terminals on the SPS-4 to the negative terminals on the amplifier and speakers. See (Figure 3).

4. Locate the pre-printed Room Labels. Affix the appropriate label to the recessed area over each ON/OFF selector button.

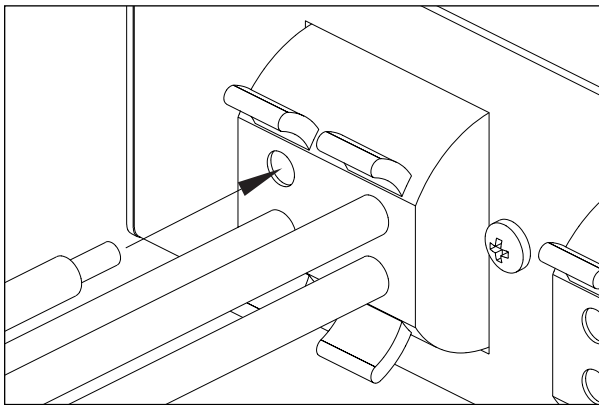


Figure 3
Connecting the
Wires

Operation

"TECH TIP"

If your amplifier or receiver has "A" and "B" speaker-pair outputs, connect the SPS-4 to the "A" outputs. Do not connect anything to "B". This will prevent the amplifier or receiver from driving an unusually low impedance load.

There are two ways to use the SPS-4. You may play one pair of speakers at a time, or play multiple pairs simultaneously.

If you intend to play more than one pair of speakers at the same time, you will need to become familiar with the operation of the SPS-4's PROTECTION button.

Playing One Pair of Speakers At a Time

1. Make sure the amplifier or receiver power is OFF and set the volume to minimum.
2. Locate the ON/OFF button on the SPS-4 which corresponds to the speaker pair you wish to play. Set it to the ON position.
3. Turn on the amplifier or receiver and select a source, such as the tuner or CD player.
4. Slowly turn up the amplifier or receiver volume and set it to a comfortable (not maximum) listening level. Be careful not to overdrive or "clip" your amplifier. If the sound becomes muddy or distorted, you have reached the limit of your amplifier's volume capability and should quickly reduce the volume to avoid damaging your speakers.
5. To turn off the speaker pair, simply press the corresponding ON/OFF button on the SPS-4.

Playing Two or More Speaker Pairs Simultaneously

1. Make sure the amplifier or receiver power is OFF and set the volume to minimum.
2. On the right side of the SPS-4's front panel is a button labeled PROTECTION. This button activates the SPS-4's impedance correction circuitry. The circuitry assures that your receiver or amplifier will see a safe operating load when playing multiple speaker pairs simultaneously. Since most receivers and amplifiers are not rated for use below a 4 ohm load, you will need to activate the PROTECTION button whenever the overall system impedance might fall below 4 ohms. Use the following chart as a guide for setting the PROTECTION button.

"TECH TIP"

You will need to activate the SPS-4's PROTECTION button whenever the overall system impedance might fall below 4 ohms.

| When playing the following speakers: | The Protection button should be: |
|-----------------------------------------|----------------------------------|
| 1 or 2 pair of 8-ohm speakers | OFF |
| 3 or 4 pairs of 8-ohm speakers | ON |
| 1 pair of 4-ohm speakers | OFF |
| 2, 3, or 4 pairs of 4-ohm speakers | ON |
| Any combination of 4 and 8 ohm speakers | ON |

Set the Protection button to the correct position using the chart shown above.

3. Locate the ON/OFF buttons on the SPS-4 which correspond to the speaker pairs you wish to play. Set them to the ON position.
4. Turn on the amplifier or receiver and select a source, such as the tuner or CD player.
5. Slowly turn up the amplifier or receiver volume and set it to a comfortable (not maximum) listening level. Be careful not to overdrive or "clip" your amplifier. If the sound becomes muddy or distorted, you have reached the limit of your amplifier's volume capability and should quickly reduce the volume to avoid damaging your speakers.
6. To turn off one or more speaker pairs, simply press the corresponding ON/OFF button(s) on the SPS-4. Refer to the Protection chart for the correct setting of the PROTECTION button.

Balancing Speaker Volume

The volume control on your receiver or amplifier serves as the "master" volume for all speaker pairs connected.

The volume level of the speakers may vary from room to room. This is caused by several factors. Two lesser factors are the size of the speaker and its efficiency. The largest factor is the physical size of the room.

The best way to balance speaker volume is to equip each of the speaker pairs in your system with a Niles volume control. The controls allow you to adjust the volume of each speaker pair individually. If all the speaker pairs in your system are equipped with Niles volume controls, you can leave the amplifier or receiver volume set at one position and use the Niles controls exclusively.

SPECIFICATIONS

Audio Power Handling
100 Watts/channel
continuous music
power

Frequency Response
+0 dB, -0 dB (flat) from
20 Hz to 20 kHz

Mounting
Table-top component

Wiring Requirements
Individual runs of
2-conductor speaker
wire. Connectors
accommodate wire
sizes 14-22 gauge
(16 gauge
recommended)

Overall Dimensions
8 1/2" wide x 2" high
x 6 3/4" deep

Weight
1 3/4 lb.



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